

DEPARTMENT OF STATE
DIVISION OF LANGUAGE SERVICES

(TRANSLATION)

LS NO. 41893
T-131
Russian

Water Resource

Duplicate

NAVY, USAF, DOS declassification & release instructions on file.

Moscow, April 29, 1974
N 53-51

Dear Mr. Brown:

Thank you for your letter of January 21, 1974, and for the proposals on scientific and technical cooperation on topic II-2, Cold-Weather Construction Techniques.

We reviewed your proposals and approved them, except for some questions which we feel it would be better to define at the meeting of the sides when we work out concrete cooperation plans.

We are sending you a list of questions on the same topic prepared by our specialists.

We would like to propose a reciprocal exchange of delegations of specialists for the current year. We shall be glad to receive you and your colleagues in August or September to establish direct contacts, and to discuss and coordinate our cooperative program for the immediate future.

You and your delegation will then have a chance to acquaint yourselves more closely with the All-Union Institute "Gidroyekt" and the All-Union Institute of Hydraulic Engineering (VNIIG) in Leningrad, and to visit the Vilyuy and Bratsk hydroelectric power stations.

A visit to the U.S. by our delegation could be planned for the fourth quarter of 1974. During our meeting at that time we could sign the programs and action plans of our mutual cooperation for 1974-76.

Water Resources

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As a first step, we are sending you papers by Soviet specialists dealing with the construction of hydroengineering complexes under severe weather conditions. The papers were discussed at a mutual, Soviet - Canadian seminar. We are preparing for delivery to you a bibliographic list of works which reflect our experience in designing, investigating, building and operating hydroengineering structures.

Lead agencies on the topic for the U.S.S.R. Ministry of Power and Electrification will be the Institute "Gidroproyekt," its research division, and VNIIG (Leningrad). Organizations of other Ministries and agencies will be involved in the project as the need arises.

In our view a reciprocal exchange of delegations and individual specialists without currency transactions, i.e., the host country carrying all expenses arising from the stay of the other country's representatives, can be acceptable for both sides.

Would you please acknowledge the receipt of this letter and inform us of your views on its content.

We are certain that our cooperation will be highly beneficial and useful for both sides.

Please accept my apologies for the delay in answering your letters.

Respectfully,

[s] L. Kudoyarov
U.S.S.R. Ministry of Power and
Electrification

Mr. Frederick R. Brown
U.S. Department of Defense
Corps of Engineers
Waterways Experiment Station
Vicksburg, Miss. 39180

Glavniiprojekt (Main Administration of
Research and Planning Organizations)
Coordinator for the topic "Cold-Weather
Construction Techniques"

Appendix 1

List of Questions on the Topic "Cold-Weather Construction Techniques"

1. Exchange of bibliographic material (title, when, and where published) on special, mutually agreed to topics.
2. Volume, type and technique of surveys and scientific research executed for various hydroengineering complexes designed for and built under severe weather conditions (stages, terms, equipment and instruments used, work specifications and techniques).
3. Volume, type and technique of design work (stages, terms, organization, characteristics of the standards applied, procedure for reviewing and approving plans, which problems have to be agreed to and with whom).
4. Technique of estimating the cost of a project, and determining its economic efficiency and its funding sources; principles for the allocation of capital investments among individual water users and consumers interested in the execution of a given project.
5. Principles on which is based the establishment of an infrastructure in pioneer and sparsely populated cold-weather areas (determining the productivity or throughput capacity of the works included in them, the priority and schedule of project execution, the duration of construction and organization of construction and erection work, the returns from capital investments).
6. Type and volume of investigations required for the study of the physico-technical and geotechnical properties of foundations of concrete dams and dams made of local materials erected under severe weather conditions; in particular, which properties are studied in permafrost and perennially frozen ground.

-2-

7. Establishment of seepage control devices in dams made of local material and in the foundations of dams made of any material and of any design, erected on permafrost or perennially frozen terrain; equipment, materials and techniques employed.

8. Ways of forecasting thawing time and the volume of thawed permafrost and perennially frozen ground in dam foundations under the effect of seepage from the forebay to the aft bay, and of heat accumulated in the reservoir. The problem of keeping the terrain permanently frozen and how to resolve it, whether it is possible and economically advisable to use natural cold for this purpose.

9. Technique of extracting and processing various soils in quarries, transporting and placing them in dams at subfreezing temperatures; assignment of a rated density for soils placed into various sections of a dam, and complex measures by which to obtain it. Requirements placed on rocks to fill and support upstream escarpments of dams.

10. Technique of measuring temperatures of earth and concrete dams, and their foundations; forecasting temperature fields inside dams and their foundations by experimenting with models, and methods, materials and instruments used. Design and technological measures to prevent deep penetration of negative temperatures into a dam and formation of icing that makes difficult or totally eliminates the normal operation of seepage control devices.

11. Methods used in designing dams (especially dams made of local materials) for regions with severe weather conditions, to calculate the effect of ice and storage decrease on the state of stress of the structure, in particular on the structure of the upper support of escarpments of dams made of local material;

-3-

the most reliable, economic and durable designs for such structures.

12. The most modern and scientifically reliable analytical methods for calculating the stability of escarpments of rockfill and earth dams and their foundations, taking into account the latest achievements in soil mechanics and the possibility of using computers.

13. Requirements placed on the starting materials (sand, gravel, crushed rock, cement, and water) for the preparation of concrete to be placed into various hydraulic engineering works, constructed under severe weather conditions; active surface admixtures employed, and composition of concretes providing improved placeability, compactness, impermeability, low-temperature resistance and durability of concrete in different sectors of pressure installations. Quick methods for checking the quality of concretes at the factory and in concreting blocks; equipment and instruments used.

14. Types of concrete slabs the use of which is most preferable under severe weather conditions, reasons for their use, peculiarities of their design and use. Methods of erecting them, division of the structure into concreting blocks; timbering used in summer and winter, intra-block mechanization, equipment for the transportation, placing and compacting of concrete; temperature-humidity conditions of poured concrete prescribed for the period during which it acquires its rated strength; striking terms and permissible temperature gradients, instruments used, and other questions concerning concrete works.

15. Temperature control within concrete dams during construction and operation; effect of temperatures on the state of thermal stress of the structure; need for artificial cooling of concrete walling, its conditions, and equipment employed; design, construction, and technological measures

-4-

connected with the impermeabilization of construction joints in the structure (intercolumnar, inter-block and, in a number of cases, inter-sectional joints); temperature conditions under which impermeabilization must occur, composition of solutions and injection equipment used; advisability of using widened joints (small-size sealing blocks) filled with concrete after the rated temperatures have settled in the structure, instead of impermeabilization; volume and relative cost of cementing (impermeabilization) of joints; possibility of placing dams under head without or with partially cementing (impermeabilizing) intercolumnar joints, and assessment of the possible consequences; admissibility and advisability of repeated injection of solutions into joints to be cemented at negative temperatures in the concrete blocks forming the joints, specifications for the solutions, for reinforcement fittings, for injection equipment, and working techniques; organization of operational quality control of the impermeability of dams, and instruments used to this end.

16. Cracking of dams built under severe weather conditions, and ways of controlling it. Criteria for admissibility of cracking of concrete dams, and for the permissible width of cracks. Use of epoxy resins and other new polymers to seal cracks and improve the impermeability of structures, techniques and equipment employed.

17. Providing dams with proving-and-indicating equipment, its design, how to obtain information from it, and computerized processing of that information.

18. Specifications for letting large quantities of water and ice flow through structures during construction of concrete dams or dams made of local

-5-

materials under severe weather conditions; predicting the formation of sludge and ice, of ice jams and obstructions in the fore and aft bays during construction; measures to prevent such phenomena, or to minimize their harmful consequences.

19. Positive and negative effect on the environment and ecology of hydro-engineering complexes built in regions with severe weather conditions.

20. Use of automated construction control systems during construction and erection work at hydroengineering complexes or individual structures in regions with severe weather conditions; designs and equipment used, and economic effects.

| No. | Title of topics and work execution stage | Execut. | | Work execution terms (year, quarter) | | Type of work performed | Organizational measures |
|-----|---|--|--|--------------------------------------|---|--|-------------------------|
| | | U.S.S.R. | U.S.A. | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1 | Experience in designing, building and operating hydroengineering structures in cold-climate regions | U.S.S.R. Ministry of Power. Main Administration of Research & Planning Organizations. "Gidroproyekt" Institute. All-Union Institute of Hydraulic Engineering (Leningrad) | Research Laboratory on Cold-Climate Regions. U.S. Corps of Engineers | 1974-80 | Development of recommendations to improve and increase the efficiency of designing, building and operating hydroengineering structures under cold-climate conditions. | | |
| 1.1 | Reciprocal exchange of information on problems and questions interesting both sides. | Same. | Same. | 1974 (3rd quarter) | Study of information materials. | Selection and exchange of materials of topographical | |
| 1.2 | Reciprocal dispatching of specialists to study designing, building and operating techniques of hydroengineering structures under severe weather conditions, and to discuss and coordinate preliminary the scientific and technical cooperation program for 1975-76. | Same. | Same. | 1974 (3rd quarter) | Visit of design and scientific centers and laboratories, of hydroengineering structures and works in operation or under construction. Trip reports. | Travel of 5 American specialists in U.S.S.R. for 15 days | |

1.3 Development of joint cooperative working program for 1975-76. Same : Same 1974 (4th quarter) Meeting of specialists for final discussion and coordination of co-operative program for 1975-76. Travel of 5 Soviet specialists in the U.S. for 15 days.

Note: Reciprocal travel for the implementation of the cooperative program is understood to take place on the basis of equivalent exchanges without currency transactions.

Approved For Release 2002/05/07 : CIA-RDP79-00798A000600100007-4

22 May 1974
(DATE)

MEMORANDUM FOR THE RECORD

SUBJECT: Opinion Request - *Water Resources (S+T Bilateral)*Attached is self-explanatory material from the Department of State.
May we have your opinion by 10 June 1974.

Please state degree of interest and whether we will receive requirements.

(IMAGE)

COMMENTS:

DISTRIBUTION:

neg coming

OSI —
OBBG1 —
OER — no obj
AF — no obj + ~~NA~~ a
ARMY —
NAVY — 1-3-5
DIA —
Commerce —
LES —

*Ray photo
by note 12 Aug 74*

Water Resources

25X1A

*MR NO. 3 MAY 74*E2 IMPDET
CL BY: 007622

25X1A

22 May 1974
(DATE)

MEMORANDUM FOR THE RECORD

SUBJECT: Opinion Request - *Water Resources (S+T Bilateral)*

1. (U) As requested in the above opinion request, the following comments are forwarded:

a. (C) Positive intelligence opinion: It is anticipated that Navy would levy few requirements and have little interest in this subject.

b. (C) Security opinion:

(1) No objection provided no Soviet/East European visitors have any access, visual, documentary or verbal to production, research or other activities funded by Navy contracts or grants, whether classified or unclassified.

(2) The Navy Member objects to visitors under an educational exchange or visitor program visiting industrial facilities.

J. M. Urban

J. M. URBAN
Navy Member, Interagency
Intelligence Advisory Group
on Exchanges

Copy to:
DIA (DIADC-4D)
NAVINTCOM-03DZ
OASD/ISA/IT
Classified by: NAVINTCOM-00X
Exempt from GDS of EO 11652
Exemption Category 5B(2)
Declassified on: Impossible
to determine

CONFIDENTIAL
CONFIDENTIAL

USAF POSITION ON COMMUNIST BLOC VISITORS

Visitors: Water Resources (S&T Bilateral)

Project and Sponsor:

| LGZ | AFSC | FTD | IAF/CUFI |
|-----|------|-----|----------|
| | N/O | N/O | 1 |

8. USAF also provides the following:

Opinion # 40-2 Due 10 Jun 74

Passed to IIAGE 10 Jun 74

Classified by CIA/IIAGE
EXEMPT FROM GENERAL DECLASSIFICATION
SCHEDULE OF EXECUTIVE ORDER 11652
EXEMPTION CATEGORY 2
DECLASSIFY ON Indef

109

22 May 1974
(DATE)

MEMORANDUM FOR THE RECORD

SUBJECT: Opinion Request - *Water Resources (S+T Bilateral)*

Attached is self-explanatory material from the Department of State.
May we have your opinion by 7 June 1974.

Please state degree of interest and whether we will receive requirements.

 (IIAGE)

COMMENTS:

DISTRIBUTION:

OBG/ - Bess ✓
 O&R - no obj ✓
 OSI ✓
 AF - Kooly & #1 ✓
 ARMY ✓
 NAVY ✓ 1-3-5
 DIA ✓
 LESS ✓
 Commerce ✓

*Ray P told
by note
12 Aug 74*

Water Resources

25X1A



ALMO 3 MAY 1974

E2 IMPDET

CL BY: 007622

W
22 May 1974
(DATE)

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(2) The Navy Member objects to visitors under an educational exchange or visitor program visiting industrial facilities.

J. M. Urban
J. M. URBAN

Navy Member, Interagency
Intelligence Advisory Group
on Exchanges

Copy to:

DIA (DIADC-4D)

NAVINTCOM-03DZ

OASD/ISA/IT

Classified by: NAVINTCOM-00X

Exempt from GDS of EO 11652

Exemption Category 5B(2)

Declassified on: Impossible
to determine

CONFIDENTIAL
CONFIDENTIAL

CONFIDENTIAL
20120507 CIA RDP79-007

17
11

14 Feb 74
(DATE)

MEMORANDUM FOR THE RECORD - Opinion Request (Fast/Telephone)

SUBJECT: *ST Water Resources*

DUE DATE: *27 Feb 74*

COMMENT:

DISTRIBUTION

OSI -

OER -

Ellie -

OBG1 -

AF - *AFSC, QVAFI, FTD no obj*

ARMY -

NAVY -

DIA -

Commerce -

LES -

STATE TOLD

DATE

BY

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E2 IMPDET
CL BY 007622

C-O-N-F-I-D-E-N-T-I-A-L

Water Resources

no comments

*2 subjs - know something about
1. ltr to Fairchild inter-basin transflow of large rivers suggest - to them a briefing - how much US know about USSR? if not concerned OBG1 - will find*

*incl OBG1
offer*

2. investigation ltr to 'slam' with Kings - why? if want background on reoper & location of this project - if no brief is could make a paper project to present them

11:40 29 Dec 1973

20. Pavlenko, L.D. V/O "Sojuzvod- Deputy Director General
project"

21. Kostyakov, N.S. " Chief, Foreign Relations
Division

22. Beniashvili, V.D. " Chief, Foreign Relations
Division

23. Korbut, S.F. U.S.S.R. Ministry Secretary of the
of Land and Water Working Group on
Management Water Problems

24. Anchiforov, G.I. V/O "Sojuzvod- Interpreter
project"

AMERICAN SIDE

1. Warren D. Fairchild (Topic Coordinator)
Director, United States Water
Resources Council

2. James J. O'Brien Deputy Commissioner,
Bureau of Reclamation, Department
of the Interior

3. Jack R. Jorgensen Acting Assistant Director,
Office of Water Resources Research,
Department of the Interior

4. Dr. Thomas D. Maddock Senior Scientist, Water Resources
Division, U.S. Geological Survey

5. Jack R. Thompson Deputy Chief of the Technical
Division of the Director of Civil
Engineering, U.S. Army Corps of
Engineers

6. Joseph W. Haas Assistant Deputy Chief,
Watersheds, Soil Conservation
Service, Department of Agriculture

T - 131

Russ.

Mrs

29 Apr 74

N - 53-51 -

16 July 74

additional places for US
to visit in USSR (Aug-Sept)

from OFR - [redacted] 6811

1. UST'ILIMSK

Hydroelectric Project

near Bratsk
should be on line this year

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2. SAYAN

near Mongolian Border

[redacted] says no to this one

cause - long way from completion

" " " other points of
attention

" " - we probably wouldn't be
allowed there anyway

WATER RESOURCES

25X1A

Roy Pardon
16 July 74